DEPARTMENT OF ECOLOGY
State of Washington

JW - 5012

Section 2.2
Capital Budget Grant Request Form
Watershed Plan Implementation and Flow Achievement

Project Title: **Peterson Lake Storage and Stream Augmentation Feasibility Study**
[If your Watershed Plan Implementation and Flow Achievement Request is related to or part of a Operational Project Funding Request for 2009-11 please cross-reference the name of that project in parenthesis above]

County: Jefferson

WRIA: 17

If more space is needed attach additional sheets

1. Applicant Information		
Applicant name PUD#1 of Jefferson County	**Phone no.** (360) 385-5800 ext 302	**Fax no.** (360) 385-5945
Address PO Box 929, 230 Chimacum Rd		
City Port Hadlock	**State** WA	**Zip code** 98339
Email address bgraham@jeffpud.org		
Water right holder name (If applicable and if other than applicant)	**Phone Number**	**Fax Number**
Mailing address		
City	**State**	**Zip code**

2. Project Location
Project name **Peterson Lake Storage and Stream Augmentation Feasibility Study**
Project location SE1/4 Section 6, Township 28 N, 1 West W.M.
Stream reach mile or location Headwaters of Peterson Creek and Chimacum Creek basin

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3. Project Type and Description

(Check all that apply)

Conservation and/or infrastructure improvement (pumps and pipes)	☐
Water storage feasibility study	☒
Water exchange or water right acquisition	☐

Please describe your project in detail

Project Background

Jefferson County PUD 1 was approached by Bernard Peterson initially in 2002 who wanted to give something to the community before he passed away. He had learned about local water resource problems and wanted his lake to be a part of the solution. The PUD began to share his vision for the lake and realized that if the lake was not purchased, the opportunity would be lost. While the lake purchase has fulfilled at least one watershed plan recommendation, protecting headwaters of a major WRIA 17 stream may not be enough to justify keeping the lake over the long term. It may be that fulfilling Bernard Peterson's vision for the lake is the only way it can continue to be held by the PUD. This study may end up defining the future of the lake

The area needs all the water resource help the lake can offer. The basin is plagued by a variety of water issues from seasonal water availability to low summer flows which stress ESA listed Hood Canal summer chum. Near the headwaters and immediately downstream of Peterson Lake, a large reach utilized by coho has regularly gone dry for several weeks in October. Instream flows need to be set for the creek including limitations on the number of new permit exempt wells that can be drilled. If the lake were to be used for stream augmentation as a mitigation for additional rights, several problems could be addressed with one project, if it is determined to be feasible.

Project Goal:

To determine feasibility of Peterson Lake being used for water supply storage either as a stand alone source or as mitigation for water rights by augmenting flows for Chimacum Creek during critical low flow periods.

Project Objectives:

1) Determine how Peterson Lake can best be managed to maximize the benefits of this protected lake for use as a natural storage and/or as a raised reservoir or timed source for stream augmentation.

2) Determine what benefits stream augmentation could provide salmonids downstream by performing a hydrologic test ("siphon test") during the low flow season. The test would be designed to determine inputs to the lake - both subsurface and surface – and how much flow could be contributed to the creek during low flow periods without adversely impacting the ecology of the lake.

3) Develop recommendations based upon cost, environmental, regulatory, permit (including water rights) considerations for a low impact infrastructure project designed to both provide additional water for public supply (likely as mitigation) and augment stream flows.

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Use this box to make any other comments regarding the project and water rights involved
The fate of the lake property itself may depend on a multitude of factors coming together, notably new water rights.

Currently, no usable water rights are associated with the project. There are two ground water claims associated with the Peterson Lake property that are not useful.

While the proposed instream flow rule for WRIA 17 closes all rivers and streams for most of the year, Chimacum Creek, under the current proposal, will be open from December to March. One question the study will answer is if a storage right is possible and under what constraints.

Similarly in the rule, lakes are open so long as they are not in continuity with adjacent rivers and streams. Preliminary investigations suggest the lake is perched and not in direct continuity with the creek.

Also critical is whether or not a discharge from the lake can be used for mitigation for an existing water right application (G2-30083) or other applications for agriculture or other uses in the valley.

All these water right issues are to be addressed to a large degree in the feasibility study.

Describe the project by task (statement of work)

The project by task:

Task 1 Review existing data and develop project approach
1.1 Develop list of data resources and a project approach
1.2 Review project approach with Planning Unit and revise accordingly.
1.3 Prepare final approach, documents and data sources to be used.

Deliverable(s): Final project approach (including a draft report outline) and list of data sources.

Cost: $7,000

Task 2 General hydrologic characterization of the lake and surrounding basin
2.1 Gather existing well log and geologic information for site
2.2 Characterize and describe various hydrostratigraphic units from well logs
2.3 Field investigate site, including incorporating existing local wells in GIS along with seasonal soundings.
2.4 Develop generalized water table and peizometric maps showing groundwater flow directions.
2.5 Develop a water budget detailing surface and ground water inputs to and outputs from the lake (based on results from hydrologic testing and available data) and the basin.
2.6 Develop recommendations for further hydrologic testing and/or monitoring.

Deliverable(s) : chapter in study and recommendations due at end of study

Cost: $28,000

Task 3 Engineering Feasibility of Raising Peterson Lake
3.1 Site investigation
3.2 Need assessment and water rights potential
3.3 Preliminary geotechnical evaluation
3.4 Cost estimate for full testing, permitting, engineering and design

Deliverables: Chapter in study due at the end of the study

Cost: $15,000

Task 4 Hydrologic Field Testing and Stream Augmentation Plan
4.1 Design hydrologic field test plan to determine sustainable storage/discharge
4.2 Coordinate with planning unit to staff hydrologic testing over two periods in a year (ie. June and September).
4.3 Install and GPS siphon and other needed infrastructure for testing and gauging.
4.4 Perform two seasonal hydrologic field tests.
4.5 Develop stream augmentation plan based on results and needs.

Deliverables: Hydrologic test plan, two seasonal tests, stream augmentation plan; all but hydrologic test plan due at end of study. Hydrologic test plan is due end of first quarter.

Cost: $24,000

Task 5 Compilation of findings and final report
5.1 Compilation of data including GIS datasets.
5.2 Writing of draft report to be reviewed by the planning unit.
5.3 Final report.

Deliverables: Datasets and report on disk and 12 hard copies

Cost: $9,000

Task 6 Grant Administration

Deliverables: Monthly reports

Cost: $12,000

4. Project Budget

Project Budget

$95,000

Total budget by project task or by expenditure

TASK	COST
Task 1 Review existing data and develop project approach	**$7,000**
Task 2 General hydrologic characterization of the lake and area	**$28,000**
Task 3 Engineering Feasibility of Raising Peterson Lake	**$12,000**
Task 4 Hydrologic Field Testing and Stream Augmentation Plan	**$24,000**
Task 5 Compilation of findings and final report	**$9,000**
Task 6 Grant Administration	**$12,000**
TOTAL	$83,000

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5. Funding Source Information

Total project amount expected to be provided by sources other than this program (dollar total and percent of project budget)
Limited in-kind staffing during the hydrologic testing. Not a part of project budget.

Identify sources and type of funding other than through this program grant. Include expected dates of participation. Include as an attachment; letters of commitment, offer letters, application approvals, etc.

Source and type of funding: Jefferson County PUD#1 in-kind staffing for field testing

Amount: TBD

Status: Pending grant approval

Dates of participation: TBD

Source and type of funding:

Amount:

Status:

Dates of participation:

Source and type of funding:

Amount:

Status:

Dates of participation:

Source and type of funding:

Amount:

Status:

Dates of participation:

Source and type of funding:

Amount:

Status:

Dates of participation:

Source and type of funding:

Amount:

Status:

Dates of participation:

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6. Instream Flow and other Instream Habitat Benefits

A. Water Right Information - Attach Water Right documents
(You may skip this section if this application is for Storage Feasibility Study funding)

Water right holder's name (if other than applicant)	Phone no: ( )	Fax no: ( )
Address		
City	State	Zip code
Complete legal description of the property attached to this water right:		
Water right number:		
Parcel number associated with this water right:		
Do you own the property proposed for this project? If not, please explain:		
If the grant applicant is not the water right holder, please explain the reason:		

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Water source (Stream name).

B. Water Usage

Has water been put to beneficial use in the past five years?

Yes ☐ No ☐ I don't know ☐

Describe that use in terms of the specific beneficial use during that period:

(Please attach any available documents that verify that use during the last five years. Include aerial photographs, power company records, flow meter records, crop type records, NRCS documentation or FSA records)

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Has beneficial use of this water ceased for a period of five or more years during any period since 1967? Yes ☐ No ☐
Please describe the beneficial use for the water quantified under the water right discussed above. Describe the following: purpose (examples: domestic, irrigation, municipal); system type; if irrigation, describe crop type.
Quantify as nearly as possible current water use: Instantaneous rate (QI) of use: CFS Annual rate (QA) of use ACRE- FEET
Historic beneficial use quantity of the water right (highest of the last 5 years/ irrigation seasons in instantaneous and annual quantities) _____ CFS _____ ACRE-FEET
If irrigation, how many acres are irrigated under this water right?
Are there other water rights associated with this specific water right?
In order to process this pre-application ecology requires the following information (include for the previous five years; please attach copies of all documents and maps) • Power data (contact local power utility for pump records, etc.) • Historical crop type data (contact local FSA office) • Flow meter records (contact local power utility) • Aerial photos (contact local FSA office)

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C. Estimated Total Water Savings

Infrastructure projects: Estimate the water to be conserved through this project. Provide engineering or technical analysis to support this estimate.

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOT
QA (ACRE-FEET)													
QI (CFS)													

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D. Additional Instream Benefits

Describe other instream benefits envisioned as a result of funding this project:

1) Create the ability to put water instream at anytime necessary.
Currently, there are few if any ways in the Chimacum Valley to put water into the creek during critical low flow periods. Ideally, the project would demonstrate the feasibility of having the ability to do so.

2) Retain winter flood water for beneficial use when needed.
While the Peterson Lake basin itself is fairly small (perhaps less that 500 acres), it is in the wettest part of the basin. Using the lake to retain water during the winter could limit damaging flood flows enough to prevent scour or the destruction of salmon redds.

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7. Resources currently committed to ensure long-term performance of the proposed project (operation and maintenance).

Who is responsible for long-term operation and maintenance of the project?
Jefferson County PUD#1 owns the Peterson Lake property and would be responsible for the long term operation and maintenance of project.

Have operation and maintenance costs been identified? Yes ☐ No ☒

If yes, please describe:

Summarize these costs on an annual basis below:
Not known

Are measurement devices other than diversion source meters necessary to monitor compliance with the project intent or plan? Yes ☐ No ☒
If yes, please describe:

A lake level staff gauge is currently installed (since October 2008). A new gauge would need to be installed if lake was raised.

Does a water measurement device exist on the source and downstream of the proposed project?
☐ yes ☒ no

If no, will a water measurement device be installed as part of this project? Yes ☒ No ☐
If yes, describe location and operating entity:

Much depends on the specific design of the study. Several reaches of the creek would likely be measured manually using field teams during the hydrologic field testing. One probable location is the confluence of Peterson Creek with Chimacum Creek

If yes, provide the river mile: NA, near headwaters

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What is the nearest stream gage downstream of the proposed project? Source name

Chimacum Creek

River mile : 0.3

8. Proponent's Readiness to Proceed

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Describe status of feasibility reports, engineering design, and permits. Provide documentation for these deliverables and describe the project effort timeline as appropriate (submit two (2) copies of all required documents).

Grant is for feasibility study to determine if the lake can be used for storage and release. Project would require a temporary water right for testing which is not currently in Ecology's queue.

Does the project proponent own the land for the proposed project? If not, does the proponent have documented access to the right of way or owns an easement to the property proposed (please attach appropriate documentation including title report as applicable).

Jefferson County PUD #1 owns the property surrounding the lake.

Design/Engineering Status: Not started. Project is to determine feasibility

Pre-planning (pre - permitting)	☐	Status:
Pre-design (design reports) (10%)	☐	Status:
Schematic design (30%)	☐	Status:
Design development (75%)	☐	Status:
Construction documents (95%)	☐	Status:
Bid documents (ready for bid)	☐	Status:

Permit Status: Not started.

SEPA	☐	Status:
401	☐	Status:
Dept. of Fish and Wildlife consultation	☐	Status:
Storage and/or Secondary Use Permit	☐	Status:
Other: (_____)	☐	Status:
Other:(_____)	☐	Status:
Other: (_____)	☐	Status:

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9. Signatures (send this sheet electronically and by original signature in surface mail)

I certify that the information above is true and accurate to the best of my knowledge.

I understand that in order to process my application, I am hereby granting staff from the Department of Ecology access to the above site(s) for inspection and monitoring purposes.

If assisted in the preparation of the above application, I understand that all responsibility for the accuracy of the information rests with me.

I also understand that I may rescind this application at any time prior to signing the Agreement with no other obligations or requirements.

William A Graham — 12/31/08
(Applicant/ Grant Recipient) (Date)

NA — ___/___/___
(Water Right Holder) (Date)

Jefferson County PUD — 12/31/08
(Land Owner(s) of Existing Place of Use) (Date)

For More Information Contact:

Dave Burdick
Voice: (360) 407-6094
Email: dbur461@ecy.wa.gov
Web: http://www.ecy.wa.gov/watershed/Index.html

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